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EXAMINER

STOCK JR, GORDON J

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,128

Applicant(s)

DOTY ET AL.

Examiner

Gordon J. Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-20, 22-31, 33-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37, 45/37, 46/37, 47/37 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-20, 22-31, 33-36, 38-44, 45/12, 46/12, 47/1, 47/12, 47/24, 47/35, 47/40, 48, 49 is/are rejected.
- 7) ☒ Claim(s) 45/35, 45/40, 46/35, 46/40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Response received April 14, 2005 has been entered into the file.

Claim Objections

2. **Claim 8** is objected to for the following: "the π -conjugated polymer material" of line 1 lacks antecedent basis. Correction is required.
3. **Claim 26** is objected to for the following: "the π -conjugated polymer" of line 1 lacks antecedent basis.
4. **Claim 47** is objected to for the following: "the polymer chains" lack antecedent basis.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 36, 38, 39, 40** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "about 10 microns to about 100 microns" in **claims 36 and 38** is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "about 10 microns to about 100 microns" renders the distance between wires unclear.

The term "has C:H ratio and density substantially equal to that of human skin" in **claim 39** is a relative term which renders the claim indefinite. The term "has C:H ratio and density substantially equal to that of human skin" is not defined by the claim, the specification does not

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provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Since human skin varies in density and composition from person to person and from one area of the body to another area of the body and since it is unclear as to the actual compound the C:H ratio is being equated in human skin, the C:H ratio and density of the pi-conjugated polymer has been rendered indefinite.

The terms "small volume" and "high surface area" in **claim 40** are relative terms that renders the claim indefinite. The terms "small volume" and "high surface area" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The terms render the size of the cylindrical-shape structure indefinite.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-3, and 8-9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Argyropoulos et al. (6,106,742)**.

As for **claims 1-2**, Argyropoulos discloses in high solid conductive coatings compositions: a π -conjugated material having an electrical resistivity of at least or greater than a gigaohm-cm, a test solvent formulation comprising a mixture of p-tert-butyltoluene and p-xylene having an electrical resistivity of 2000 megaohms-cms (col. 16, lines 44-50).

As for **claim 3**, Argyropoulos discloses everything as above (see **claim 1**). In addition, he discloses that the non-conductive binder in the solvents may comprise π -conjugated polymers, styrenes (col. 4, line 15).

As for **claims 8-9**, Argyropoulos discloses everything as above (see **claim 3**). In addition, Argyropoulos demonstrates that the π -conjugated material would be mixed with organic polymers (col. 4, lines 5-20) such as styrene and styrene copolymers (col. 4, line 14-15) to form primer compositions of a plurality of non-conductive polymers (col. 3, lines 40-45).

9. **Claim 35** is rejected under 35 U.S.C. 102(b) as being anticipated by **Argentieri et al. (5,241,415)**.

As for **claim 35**, Argentieri in a heated recording chamber discloses the following: an array of wires (col. 3, line 3) embedded in a π -conjugated material, Mylar film (col. 3, lines 10-11); wherein the array comprises a first set of parallel spaced apart wires intersecting orthogonally with a second set of parallel spaced apart wires, a grid of wires (col. 3, line 3; Fig. 1: 51); means for supplying power to the array, DC power supply (col. 3, line 7).

10. **Claim 40** is rejected under 35 U.S.C. 102(a) as being anticipated by **Hodges et al. (6,174,420)**.

As for **claim 40**, Hodges in an electrochemical cell discloses the following: a pair of electrodes, each having a length and width, wherein the length is greater than the width (Fig. 15: 13); a π -conjugated polymer, PET layer, between said electrodes (Fig. 15: 1); wherein the combination of electrodes and a π -conjugated polymer, PET layer, is rolled up along their length to form a cylindrical-shape structure having a small volume relative to the surface area (Fig. 15; col. 4, lines 30-35); means for providing power to said electrodes (col. 4, lines 44-47).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. **Claims 3 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Wang et al. (5,663,238)**.

As for **claims 3 and 7**, Argyropoulos discloses everything as above (see **claim 1**). In addition, he mentions low conductive aromatic solvents (col. 10, lines 35-45) and the use of thermoplastic polymers (col. 4, lines 18-20) and other polymers for polymeric binders (col. 4, lines 5-25). He does not explicitly state the use of polyaromatic hydrocarbons as solvents or nonconductive binders with π -conjugated material. However, Wang teaches the use of naphthalene ring structure in copolymers to have superior thermal, mechanical, barrier, and chemical resistance properties in applications such as paint (col. 1, lines 25-35 and 60-65; col. 2,

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lines 1-3). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the π -conjugated material solvent have a binder with hydrocarbon structure such as naphthalene in order to produce paints with superior thermal, mechanical, barrier and chemical resistance.

14. **Claims 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Tiitu et al. (6,500,544)**.

As for **claims 5-6**, Argyropoulos discloses everything as above (see **claim 3**). And he discloses that polymers and copolymers may be used as binders (col. 4, lines 10-23). He does not specifically mention polypyrroles, polyanilines, or polythiophenes or their respective derivatives. However, Tiitu in corrosion resistant coatings teaches using polyanilines, polypyrroles, or polythiophenes as hardeners in paint compositions (col. 15, lines 45-67). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use polyanilines, polypyrroles, polythiophenes or their derivatives, copolymers, in order to provide a hardener for the paint formulation.

15. **Claims 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Testa et al. (H1386)**.

As for **claims 10-11**, Argyropoulos discloses everything as above (see **claim 3**). He is silent concerning incorporating a metal such as aluminum. However, Testa in aluminum complexes useful for cross-linking coating compositions teaches using aluminum for drying agents in coating compositions (col. 2, lines 55-65). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a metal such as aluminum

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incorporated into the paint formulation comprising a nonconductive binder and high resistive solvent to facilitate drying.

16. **Claims 12-15, 19-20, 24, 25, 41, 42, 47/12, 47/24**, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al.**

(6,106,742).

As for **claims 12-13, 24-25, 41, 42** Fukushima in a highly conductive polymer composition discloses the following: an apparatus for measuring conductivity comprising: two gold electrodes (Fig. 4: 2, 2') with a power supplying means (Fig. 4: 5) and a compartment disposed between the electrodes for placing a sample to have conductivity measured (Fig. 4: 1). He is silent concerning the material being tested being the π -conjugated material of claim 1, but discloses testing conductivity of polymer compositions (col. 4, lines 50-62; col. 5, lines 35-40). And Argyropoulos in a high solids conductive coating teaches: a π -conjugated material having an electrical resistivity of at least or greater than a gigaohm-cm, a test solvent formulation comprising a mixture of p-tert-butyltoluene and p-xylene having an electrical resistivity of 2000 megaohms-cms (col. 16, lines 44-50) with a high resistive polymer binder (col. 3, lines 35-50; col. 4, lines 1-20). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have Fukushima's device test the conductivity of the polymer composition of claim 1 to guarantee the composition has an extremely low conductivity.

As for **claim 14**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 12**). In addition, Argyropoulos discloses a polymer for the binder in the solvent solution (col. 4, lines 10-20).

As for **claim 15**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 12**). In addition, Argyropoulos discloses that the non-conductive binder in the solvents may comprise π -conjugated polymers, styrenes (col. 4, line 15).

As for **claims 19-20**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 15**). In addition, Argyropoulos demonstrates that the π -conjugated material would be mixed with organic polymers (col. 4, lines 5-20) such as styrene and styrene copolymers (col. 4, line 14-15) to form primer compositions of a plurality of non-conductive polymers (col. 3, lines 40-45).

As for **claims 47/12 and 47/24**, Fukushima in view of Argyropoulos discloses everything as above (see **claims 12 and 24**). In addition, Fukushima discloses submitting the sample to an external stress, electric current (Fig. 4: 5). As for orienting polymer chains, Fukushima is silent and Argyropoulos does disclose polymers in the binder of the composition (col. 4, lines 10-24). The Examiner takes official notice that molecules orient in an electric field depending on their electrical properties. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that the polymer chains would be oriented in order to adjust to the electric field applied.

17. **Claims 16-17, 27, 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Tiitu et al. (6,500,544)**.

As for **claims 16-17 and 27-28**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 15**). And Argyropoulos discloses that polymers and copolymers may be used as binders (col. 4, lines 10-23). Argyropoulos does not specifically mention

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polypyrroles, polyanilines, or polythiophenes or their respective derivatives. However, Tiitu in corrosion resistant coatings teaches using polyanilines, polypyrroles, or polythiophenes as hardeners in paint compositions (col. 15, lines 45-67). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use polyanilines, polypyrroles, polythiophenes or their derivatives, copolymers, in order to provide a hardener for the paint formulation.

18. **Claims 15, 18, 26, 29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Wang et al. (5,663,238)**.

As for **claims 15, 18, 26, 29**, Fukushima in view of Argyropoulos discloses everything as above (see **claims 14 and 24**). In addition, Argyropoulos mentions low conductive aromatic solvents (col. 10, lines 35-45) and the use of thermoplastic polymers (col. 4, lines 18-20) and other polymers for polymeric binders (col. 4, lines 5-25). Argyropoulos does not explicitly state the use of polyaromatic hydrocarbons as solvents or nonconductive binders with π -conjugated material. However, Wang teaches the use of naphthalene ring structure in copolymers to have superior thermal, mechanical, barrier, and chemical resistance properties in applications such as paint (col. 1, lines 25-35 and 60-65; col. 2, lines 1-3). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the π -conjugated material solvent have a binder with hydrocarbon structure such as naphthalene in order to produce paints with superior thermal, mechanical, barrier and chemical resistance.

As for **claims 30-31**, Fukushima in view of Argyropoulos and Wang discloses everything as above (see **claim 26**). In addition, Argyropoulos discloses that the non-conductive binder in

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the solvents may comprise π -conjugated polymers, styrenes (col. 4, line 15). And Argyropoulos demonstrates that the π -conjugated material would be mixed with organic polymers (col. 4, lines 5-20) such as styrene and styrene copolymers (col. 4, line 14-15) to form primer compositions of a plurality of non-conductive polymers (col. 3, lines 40-45).

19. **Claims 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Testa et al. (H1386)**.

As for **claims 22-23**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 15**). Argyropoulos is silent concerning incorporating a metal such as aluminum. However, Testa in aluminum complexes useful for cross-linking coating compositions teaches using aluminum for drying agents in coating compositions (col. 2, lines 55-65). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a metal such as aluminum incorporated into the paint formulation comprising a nonconductive binder and high resistive solvent to facilitate drying.

20. **Claims 33-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Wang et al. (5,663,238)** further in view of **Testa et al. (H1386)**.

As for **claims 33-34**, Fukushima in view of Argyropoulos and Wang discloses everything as above (see **claim 26**). Argyropoulos is silent concerning incorporating a metal such as aluminum. However, Testa in aluminum complexes useful for cross-linking coating compositions teaches using aluminum for drying agents in coating compositions (col. 2, lines 55-65). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention

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was made to have a metal such aluminum incorporated into the paint formulation comprising a nonconductive binder and high resistive solvent to facilitate drying.

21. **Claim 36** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Argentieri et al. (5,241,415)**.

As for **claim 36**, Argentieri discloses everything as above (see **claim 35**). He does not disclose the spacing of the wire grid. He does explain that the heating element conforms to the size of the tissue-recording chamber (col. 3, lines 1-5) with a specific voltage and current applied to the heating element (col. 3, lines 5-10). The spacings of the grids are a size consideration for heating, for the wire separation is inversely proportional to heating uniformity and efficiency. It would have been an obvious matter of design choice to have a grid separation of 10 to 100 microns since such a modification would have involved a mere change in the size of a component and the smaller the separation between the wires the greater the heating uniformity and efficiency. And a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

22. **Claim 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Testa et al. (H1386)**.

As for **claim 43**, Argyropoulos discloses everything as above (see **claim 1**). He is silent concerning incorporating carboxylate salts of aluminum into the material. However, Testa in aluminum complexes useful for cross-linking coating compositions teaches using aluminum carboxylates for drying agents in coating compositions (col. 9, lines 40-45). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have an aluminum carboxylate incorporated into the paint formulation to facilitate drying.

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23. **Claim 44** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Cyba (3,600,355)**.

As for **claim 44**, Argyropoulos discloses everything as above (see **claim 1**). He is silent concerning incorporating boronic acid into the material. However, Cyba in stabilizing polymers teaches using boronic acid to stabilize polymers against deterioration (col. 1, lines 19-20 and lines 44-50; col. 12, lines 70-75; col. 13, lines 1-5). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have boronic acid incorporated into the material in order to stabilize the material against UV or oxidative deterioration.

24. **Claim 45/12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Testa et al. (H1386)**.

As for **claim 45/12**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 12**). Argyropoulos is silent concerning incorporating carboxylate salts of aluminum into the material. However, Testa in aluminum complexes useful for cross-linking coating compositions teaches using aluminum carboxylates for drying agents in coating compositions (col. 9, lines 40-45). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have an aluminum carboxylate incorporated into the paint formulation to facilitate drying.

25. **Claim 46/12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (5,876,586)** in view of **Argyropoulos et al. (6,106,742)** further in view of **Cyba (3,600,355)**.

As for **claim 46/12**, Fukushima in view of Argyropoulos discloses everything as above (see **claim 12**). Argyropoulos is silent concerning incorporating boronic acid into the material .

However, Cyba in stabilizing polymers teaches using boronic acid to stabilize polymers against deterioration (col. 1, lines 19-20 and lines 44-50; col. 12, lines 70-75; col. 13, lines 1-5).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have boronic acid incorporated into the material in order to stabilize the material against UV or oxidative deterioration.

26. **Claim 47/1** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Argyropoulos et al. (6,106,742)** in view of **Fukushima et al. (5,876,586)**.

As for **claim 47/1**, Argyropoulos discloses everything as above (see **claim 1**). Argyropoulos teaches: a π -conjugated material having an electrical resistivity of at least or greater than a gigaohm-cm, a test solvent formulation comprising a mixture of p-tert-butyltoluene and p-xylene having an electrical resistivity of 2000 megaohms-cms (col. 16, lines 44-50) with a high resistive polymer binder (col. 3, lines 35-50; col. 4, lines 1-20). He is silent concerning providing an external stress to the π -conjugated material to orient the polymer chains. However, Fukushima teaches submitting a polymer sample to an external stress, electric current to test conductivity (Fig. 4: 5) . Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to submit the coating formulation to an external stress such as a current in order to test the conductivity of the polymer composition to guarantee the composition has an extremely low conductivity. As for orienting polymer chains, Fukushima and Argyropoulos are silent. The Examiner takes official notice that molecules orient in an electric field depending on their electrical properties. Therefore, it would be obvious to one of

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ordinary skill in the art at the time the invention was made that the polymer chains would be oriented in order to adjust to the electric field applied.

27. **Claims 47/35, 48, 49** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Argentieri et al. (5,241,415)**.

As for **claims 47/35, 48, 49**, Argentieri discloses everything as above (see **claim 35**). He does not explicitly state that an external stress is applied to the Mylar film and that the polymer chains are stretched, but he discloses that electricity is applied to the grid of wires to provide heating (col. 3, line 7). The Examiner takes official notice that molecules orient in an electric field depending on their electrical properties. And the Examiner takes Official Notice that Mylar films are produced by mechanically stretching the film to orient the molecules within the film; thereby stretching the molecules. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that the polymer chains would be oriented in order to adjust to the electric field applied. And it would be obvious to one of ordinary skill in the art at the time the invention was made that an external stress was provided to the Mylar film, for Mylar films are mechanically stretched to stretch the polymer chains to place the film into a precise orientation. As for providing the external stress applied at a temperature above the glass transition temperature and below the melting temperature, Argentieri does not explicitly state this. However, the heating element comprises a Mylar film (col. 3, lines 10-11). It would be obvious to one of ordinary skill in the art at the time the invention was made that the voltage was applied to the heating element at a temperature above the glass transition temperature of Mylar film in order to prevent the Mylar film deteriorating due to brittleness and below the melting

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temperature of Mylar film in order to prevent the Mylar film from flowing away thus making the heating element unsafe from having no electrical insulator.

28. **Claims 47/40, 48, 49** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hodges et al. (6,174,420)**.

As for **claims 47/40, 48, 49**, Hodges discloses everything as above (see **claim 40**). He does not explicitly state that an external stress is applied to the Mylar film, pet film, and that the polymer chains are stretched, but he discloses that electricity is applied to the electrodes (col. 4, lines 44-47). The Examiner takes official notice that molecules orient in an electric field depending on their electrical properties. And the Examiner takes Official Notice that Mylar films are produced by mechanically stretching the film to orient the molecules within the film; thereby stretching the molecules. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that the polymer chains would be oriented in order to adjust to the electric field applied. And it would be obvious to one of ordinary skill in the art at the time the invention was made that an external stress was provided to the Mylar film, for Mylar films are mechanically stretched to stretch the polymer chains to place the film into a precise orientation. As for providing the external stress applied at a temperature above the glass transition temperature and below the melting temperature, Hodges does not explicitly state this. However, the sensor comprises a Mylar film (col. 3, lines 10-11). It would be obvious to one of ordinary skill in the art at the time the invention was made that the electrical stress was applied to the sensor at a temperature above the glass transition temperature of Mylar film in order to prevent the Mylar film deteriorating due to brittleness and below the melting temperature of

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Mylar film in order to prevent the Mylar film from flowing away thus making the sensor unreliable from lack of insulation between the metal electrodes.

Response to Arguments

29. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

30. **Claims 37, 45/37, 46/37, and 47/37** are allowed.

Claims 45/35, 45/40, 46/35, 46/40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As to **claim 37**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a device for detecting ionizing radiation a plurality of layers joined together to form a multilayer stack, wherein each layer comprises an array of wires embedded in a π -conjugated material, the array comprising a first set of parallel wires intersecting orthogonally with a second set of parallel wires, in combination with the rest of the limitations of **claims 37, 38, 45/37, 46/37 and 47/37**.

As to **claims 45/35 and 45/40**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a device for detecting ionizing radiation incorporating carboxylate salts, in combination with the rest of the limitations of **claims 45/35 and 45/40**.

As to **claims 46/35 and 46/40**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a device for detecting ionizing radiation incorporating boronic acid, in combination with the rest of the limitations of **claims 46/35 and 46/40**.

Conclusion

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well-known statement was made.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and

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2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

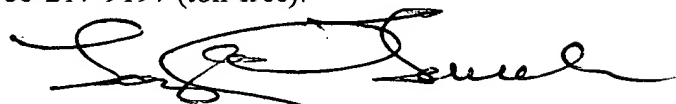
The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


gs

August 5, 2005



Layla Lauchman
Primary Examiner
Art Unit 2877